assumption of a fixed base column. It seems that the test connection provided an additional ductility to the system.

The general trend observed during testing is an increase in the rotational stiffness of the anchor bolt-bearing pad connection with increasing axial load on the pads. As the lateral deformation of the foundation element increases, the overall rotational stiffness tends to decrease. The measured rotational stiffnesses were compared to rotational stiffness values expected based on a static equilibrium model; this model tends to overpredict the rotational stiffness compared to measured values. When the measured rotational stiffness values are implemented in the nonlinear bent models, the overall behavior of the bent depends on the relative ratio of the rotational stiffness of the connection to the stiffness of the individual foundation elements. If the foundation element is much stiffer than the connection, the bent behaves more like a free standing system without rotational restraint. If the connection is stiffer than the foundation element, the system behaves more like a bent with locations fixed against rotation.

The resistance factors for laterally and axially loaded drilled shaft are developed based on test data from sites in North Carolina. Based on Davisson's method of failure load interpretation, the resistance factor for the axial loading condition is estimated as 0.38 at a reliability index of 2.5. If the simulated loads are obtained from the Intermediate GeoMaterial model as well as using methods in the AASHTO bridge specifications, then the results, termed a "combined" approach, show a resistance factor that is equal to 0.57 for the same reliability index. On the other hand, the resistance factors under lateral loading based on 0.5 inches of lateral deflection at the top of the shaft (at the ground level) is estimated as 0.4 at a reliability index of 2.5.